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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,331	02/26/2004	Tsuyoshi Kitahara	Q80114	2651

7590 07/10/2006  
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EXAMINER
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KIM, PAUL D

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/786,331

Applicant(s)

KITAHARA, TSUYOSHI

Examiner

Paul D. Kim

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**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-22, 37-41 and 50-53 is/are pending in the application.
- 4a) Of the above claim(s) 17, 18, 21, 37-41 and 50-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 16, 19, 20 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/23/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

This office action is a response to the election of species filed on 4/19/2006.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Takashi et al. (JP 08-187868).

Takashi et al. teach a process of making an ink-jet recording head comprising steps of: a first etching step for etching (or removing) the plate-shaped member to form the partition wall (3) on the front surface of a plate-shaped member; a second etching step for etching the plate-shaped member to form a land (9) on the back surface of the plate-shaped member; and a nozzle plate attaching step for attaching the nozzle plate (2) directly to the front surface of the plate-shaped member as shown in Fig. 2. In addition to that the partition wall is formed, inherently, by removing or etching portions of the plate-shaped member to produce pressure chamber (4) as shown in Fig. 2.

Re. Claim 16: The plate-shaped member includes a first layer (a layer of 3) having the front surface, a second layer having the back surface (a layer of 9) and an intermediate layer (a layer of 21) sandwiched between the first and the second layers as shown in Fig. 2, the first etching step etches a desired portion of the first layer

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selectively over the intermediate layer so that the first layer is penetrated, and the second etching step etches a desired portion of the second layer selectively over the intermediate layer so that the second layer is penetrated.

3. Claims 15 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Morikoshi et al. (US PAT. 5,684,520).

Morikoshi et al. teach a process of making an ink-jet recording head comprising a for forming the plate-shaped member to form the partition wall (a layer between 3 and 6) on the front surface of a plate-shaped member; a step for forming the plate-shaped member to form a land (6c) on the back surface of the plate-shaped member; and a step for attaching the nozzle plate (1) to the front surface of the plate-shaped member as shown in Fig. 4 (see also col. 3, line 33 to col. 4, lines34).

As per claim 22 the nozzle, the spacer (3) and the plate-shaped member are bonded together (col. 3, lines49-55).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. in view of Otsuka et al. (US PAT. 6,305,792).

Takashi et al. teach all of the limitations as set forth above except a base member having an auxiliary ink storage chamber communicated with a common ink storage chamber between the plate-shaped member and the nozzle plate (as per claim 19). Otsuka et al. teach a process of making an ink-jet recording head including a base member (101,102,103) having an auxiliary ink storage chamber (30) communicated with a common ink storage chamber (34) between the plate-shaped member (104,105) and the nozzle plate (100) as shown in Fig. 1 (see also col. 1, line 23 to col. 2, line 20) in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small.. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating an ink-jet recording head of Takashi et al. by the base member having an auxiliary ink storage chamber as taught by Otsuka et al. in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small. Otsuka et al. also teach that the auxiliary ink storage chamber is offset from a position corresponding to the common ink storage chamber and partly overlaps the ink supply passage as shown in Fig. 1 (as per claim 20). Also, Otsuka et al. teach an adhesion between the plate-shaped member and the nozzle plate (as per claim 22). Otsuka et al. teach a process of making an ink-jet recording head including a process of adhering a nozzle plate (1) to an ink chamber plate (2, equivalent with the plate-shaped member) in order to increase bonding strength between the nozzle plate and the ink chamber plate as shown in Fig. 8 (see

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also col. 8, line 55 to col. 9, line 8). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating an ink-jet recording head of Takashi et al. by adhering between the nozzle plate and the ink chamber plate as taught by Otsuka et al. in order to increase bonding strength between the nozzle plate and the ink chamber plate.

6. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morikoshi et al. in view of Otsuka et al. (US PAT. 6,305,792).

Morikoshi et al. teach all of the limitations as set forth above including a spacer (3, equivalent with a base member) except the base member having an auxiliary ink storage chamber communicated with a common ink storage chamber between the plate-shaped member and the nozzle plate (as per claim 19). Otsuka et al. teach a process of making an ink-jet recording head including a base member (101,102,103) having an auxiliary ink storage chamber (30) communicated with a common ink storage chamber (34) between the plate-shaped member (104,105) and the nozzle plate (100) as shown in Fig. 1 (see also col. 1, line 23 to col. 2, line 20) in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating an ink-jet recording head of Morikoshi et al. by the base member having an auxiliary ink storage chamber as taught by Otsuka et al. in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small.

Otsuka et al. also teach that the auxiliary ink storage chamber is offset from a position corresponding to the common ink storage chamber and partly overlaps the ink supply passage as shown in Fig. 1 (as per claim 20).

### ***Response to Arguments***

7. Applicant's arguments filed 4/19/2006 have been fully considered but they are not persuasive. Applicant argues that the prior art of record fails to disclose the claimed invention such as etching the plate-shaped member to form the partition wall. Applicant argues that the reference of Takashi et al. fails to teach to form the pressure chamber by the same etching process. Examiner traverses the argument that it is unclear as to what the same etching process is indicated. Also, there is no such a limitation in the claimed invention to form the partition wall by using the same etching process. Using one or more etching processes could form the partition wall of Takashi et al. including a taper portion and a vertical portion.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

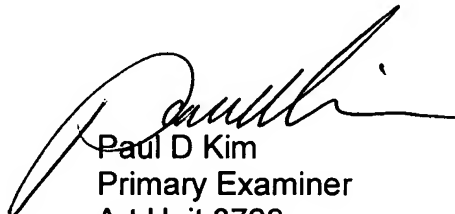
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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Friday between 6:00 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim  
Primary Examiner  
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